

## A B S T R A C T

For estimating a value of a vector of variables  $p$  in a mathematical model representing a physical process, where a state vector  $x$  of the model is  
5 estimated by a State Augmented Extended Kalman Filter (SAEKF), and where that the vector of variables  $p$  represents one or more properties of the process and is representable by a function of the state vector  $x$ , the following steps are executed:

- a) measuring values for measured variables  $u$ ,
- 10 b) incorporating the vector of variables  $p$  as an augmented state in the SAEKF, and
- c) computing an estimate of the complete state including the augmented state according to a SAEKF algorithm.

That is, process properties *themselves* are estimated, and not polynomial  
15 coefficients for computing the variables from the state, as is usually done in the SAEKF.

(figure 2)